System Walks and Sampling Colour

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Abstract: *This paper discusses some of the processes employed by the author, a Systems Artist, during the production of artwork made from walking. The authors approach to walking is discussed before describing the original drawing techniques, employed to sample digitally captured colours, on the walk, to produce drawings, colour field paintings and prints.*

Almost all of the art produced by the author starts with a walk. These walks, along with the work produced, and rules employed to produce the work can be understood as belonging to an overarching system. The author has named these systems: System Walks. This work can be understood in part through Systems Art and Land Art, but also more broadly through the author's original training in Environmental Science, Geography and Systems Science. This background in scientific and systemic thinking is now discussed before describing and illustrating the work.

Geography and Systems Science

The author originally trained in environmental data visualization, working predominantly with remotely sensed satellite image data, and Geographical Information Systems, (GIS), on environmental and development projects. He worked with large spatially organized databases that housed social and environmental data, which were cross-referenced with satellite images to find spatial and temporal patterns in natural and man-made activity. This data was collected and organized by

a wide range of specialist fields, from the physical sciences, such as Soil Science to the social sciences, such as Anthropology. Each of these fields have their own methods for categorizing, sampling, interpreting and presenting their data, and he was interested in how these disparate sets of information could be meaningfully compared. In particular he was interested in sampling, boundary and category issues found when cross-referencing the specialist data as strange, counter-intuitive patterns were revealed. How, for example, could the color pixel values of massive satellite images be meaningfully interpreted as a product of this synthesis of disparate datasets? To corroborate the datasets and to investigate the patterns this cross-referencing revealed required fieldwork, where the author would go and physically check the accuracy of the data. This process, known as 'ground-truthing' involved walking with a Global Positioning System, (GPS), and checking the accuracy of the data in the field. This process of being in the place and capturing a more qualitative sense of place, eventually led from walking, as process of science to walking as a process of art. During this work the author carried out such ground-truthing walks in South and Central America, the Middle East and Africa. As an artist he has continued with the principle of groundtruthing, as part of his practise, and this is discussed below.

Walking as Art

There has been an increased interest in walking, as an aesthetic practice, since the start of the millennium, and the author's work is part of this movement, even if his entry to walking is slightly different. There are two possible reasons for this increased interest in walking as art. Firstly it could be a reaction to the increasingly complex nature of space. Our conception of space, in abstract terms, is changing dramatically due to the spatial and temporal fluidity of the Internet. Therefore being 'out there' in the physical world is an attempt to ground experience and artistic practise in both

the physical landscape and the psychological and sublime landscape. Contemporary artists are revisiting approaches developed over the last 100 years of art inspired walking with an increasing sense of urgency. These approaches include the Dadaist and Surrealists walks, developed to investigate the uncanny aspects of the city, and an application of the Psychogeographic walking methods developed by the Situationists International to challenge the political status quo. The second possible reason for an artistic return to walking is that a new generation of artists are revisiting and reappraising the conceptually driven work of Hamish Fulton, Richard Long, Bruce Nuaman and Robert Smithson who have worked with conceptions of space since the 1970's.

For the author it is both a synthesis of this need to be 'out there' in sublime terms, with the need to ground-truth his experience in a systematic way, which fits with conceptually rigorous approach of the land artists. This seemingly contradictory nature of collecting 'objective' data whilst experiencing a place in sublime terms can be understood through the lens of Psychogeography. The origins of Psychogeography can be traced back, primarily to Paris and to Charles Baudelaire's 1863 essay, The Painter of Modern Life in which he described the Flâneur, "a person who walks the city in order to experience it." The first major written work by a Flâneur practitioner was the unfinished The Arcades Projects, by Walter Benjamin, in which he documents in great detail his walks and interactions in the former arcades of Paris. This idea of the passive urban stroller was transformed in the 1920's by the founder of surrealism André Breton who used the urban stroll as a positive tool to challenge perceptions of reality. This surrealist approach to questioning the status quo of society through walking and other surrealist methods, was latterly criticized by Guy Debord who felt they were too indirect as a form of protest. Partly in response to this perceived failure he went on to form The Situationist International, the group which pretty much to

defined Psychogeography as it is understood today. At the heart of Psychogeography was the aim of combining subjective and objective knowledge and Debord attempted to resolve this inherent paradox in his 1958 book Theory of the Dérive.

Although Debord framed his concerns in political terms there was a general underlying criticism of a society that appeared to value the spectacle over the experience. That is, people were willing to accept spectatorship over participation. More recently, Jaron Lanier noted the general malaise within society regarding original experience and mapped this to the onset of the Internet. In particular he noted that there has been little in the way of cultural innovation in terms of fashion, music and art since the dawn of widespread Internet use in the mid to late 90's, and instead the dominant culture has been one of appropriation, sampling and remix with a retro aesthetic that references pre-internet movements in fashion, music and art. He argues that the new works produced are essentially using the energy invested by the original artist, and this may go some way to explaining why there is a renewed interest in Land Art and Pyschography that requires a physical, as well as intellectual and creative investment in the work. Lanier makes his argument clearly 'Information is alienated experience. You can think of culturally decodable information as a potential form of experience, very much as you can think of a brick resting on a ledge as storing potential energy. When the brick is prodded to fall, the energy is revealed. That is only possible because it was lifted into place at some point in the past. In the same way, stored information might cause experience to be revealed, if it is prodded in the right way. A file on a hard disk does indeed contain information of the kind that objectively exists. The fact that the bits are discernible instead of being scrambled into mush—the way heat scrambles things—is what makes them bits. But if the bits can potentially mean something to someone, they can only do so if they are experienced. When that happens, a commonality of culture is enacted between

the storer and the retriever of the bits. Experience is the only process that can de-alienate information.'(Lanier, 2011, p 29)

Systems Art

As with walking, Psychogeography and Land Art, there has also been a renewed interest in Systems thinking and Systems Aesthetics within art since the turn of the millennium. Again this could stem from an underlying concern with both the abstraction of information and space, due to the Internet and the alienation of the individual from material experience of being out there in the world. Psychogeography and Land Art explicitly renew the connection with physical space, whilst Systems Art challenges the underlying processes that mediate all information in society today. This increased interest in Systems thinking and systems aesthetics in art can be traced back to two key events. Firstly, the Donna de Salvo curated exhibition, Open Systems: Rethinking Art c. 1970, held in 2005 at Tate Modern and secondly the Systems Art Symposium at the Whitechapel Gallery in 2007. These events were preceded by a number of important papers that lay the foundation for re-evaluating Systems Art as a clear branch of conceptual art, as opposed to a solely technologically determined cul-de-sac in art history. These include a number of papers from Edward Shanken including, 'The House That Jack Built: Jack Burnham's Concept of "Software" as a Metaphor for Art,' in Leonardo Electronic Almanac 6:10 (November, 1998) and Art in the Information Age: Technology and Conceptual Art, Shanken, (2002). Since the Tate and Whitechapel exhibitions and symposium there have been several important publications that have continued to re-evaluate and rehabilitate the debate regarding the Systems Art and systems thinking within art. These include: The Art of Systems, Art, History and Systems Theory, Francis Halsall and Chris Smith, eds. White Heat Cold Logic: British Computer Art 1960–1980.These texts give a valuable analysis of

specific events and work in an art historical context, but it could be argued that a broader analysis and impact has been made by the English translation of Art as a Social System, by social theorist Niklas Luhmann in 2000, in which Luhmann proposed an overarching application of systems thinking. This general social theory described society as comprised of multiple social systems such as art, the economy, law, and science.

Systems Art developed in the late 1960's as a branch of conceptual art that considered the emergent ideas of cybernetics and system science. The definition of systems and systems thinking varies between disciplines, but a useful description was given by Kenneth Boulding who stated "a system is anything that is not in chaos. We could turn the pattern around and define a system as any structure that exhibits order and pattern." (1985), Systems theory, as applied to art, grew from a group of conceptual artists in the late 1960's, such as Levine, Jack Burnham, Hans Haacke and Sol Lewitt, all of whom referenced Weiner's Cybernetics, and Ludwig Von Bertlanffy's General System Theory in their writing and work. Their work was concept driven and organised by rules as Sol LeWitt noted in his essay "Paragraphs of Conceptual Art" (1967), in which he described conceptual art as a quasi-mechanical process, "In conceptual art the idea of concept is the most important aspect of the work … [t]he idea becomes a machine that makes the art."

As noted above, the underlying reason for the resurgent interest in Land Art and Psychogeography is to counter the alienating experience of modern life, much of which is driven by the digital distribution of second-hand information. Lanier described information as alienated experience (Lanier, 2011, p.28). The emotional or psychological dangers of digital information and living with secondary experience was proposed originally by the Systems Artist Les Levine, with his art installation 'Systems Burn-Off X Residual Software' at the Phyllis Kind Gallery in Chicago in

1969. In his artist's statement in the exhibition catalogue Levine argued that "the proliferation of mass media was changing knowledge into a second-hand mental experience of simulations and representations i.e. software as opposed to first-hand, direct, corporeal experiences of actual objects, places and events, i.e. hardware. All activities which have no connection with object or material mass are the result of software. Images themselves are hardware. Information about these images is software … The experience of seeing something first hand is no longer of value in a software controlled society, as anything seen through the media carries just as much energy as first hand experience … In the same way, most of the art that is produced today ends up as information about art" (Levine, 1970 cited in Shankan 2003, p. 434).

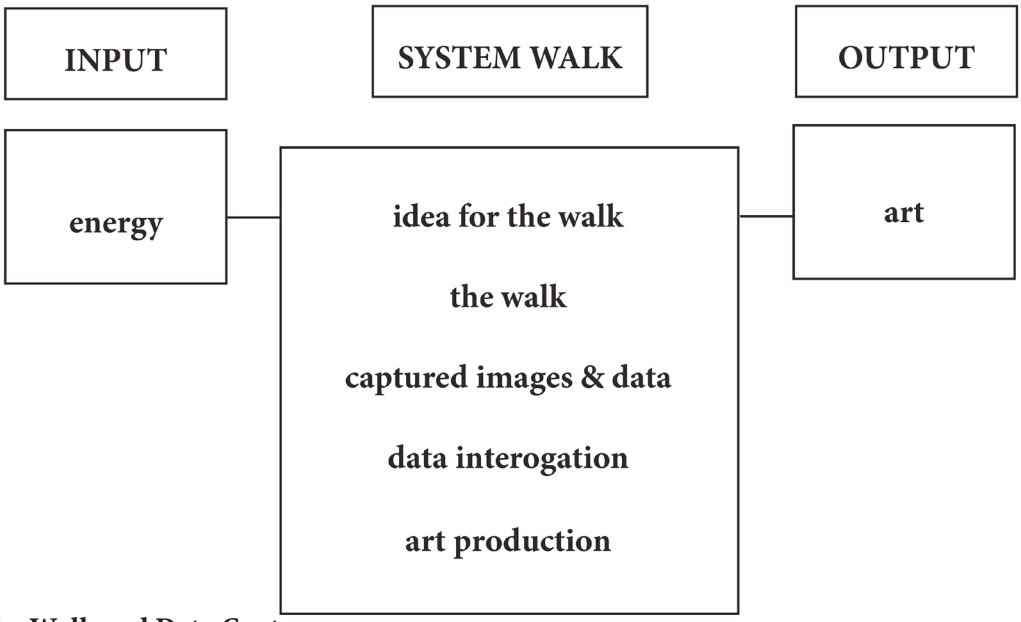
Artist Process

The System Walks can be described as conceptual art, in the sense that they are based on an idea. These ideas could be described as formal aesthetic concerns, such as the abstract representation of light and colour over the duration of a walk. Other walks may be informed by broader conceptual ideas, such as the methodology of art production. The System Walks, though, are more than the conceptual idea that motivates the walk. The idea for the walk, the walk itself, (and the energy invested in the walk) and the artwork produced are integral to the walk, and taken together form a complex 'distributed system'.

The System Walks can be considered as distributed systems, as they consist of discrete but interdependent parts of a whole. As shown in the diagram below The System Walk is essentially an enclosed system, save for the inputs of the energy and the outputs of the art. The final art 'works' of drawings, films, and paintings should be considered as system outputs of a system that was created to structure and evaluate the experience of the walk and idea.

The stages of a typical system walk will now be summarised, with a particular focus on the data collection and sampling aspects of the work to produce both drawings of the walk and colour field paintings and prints.

Fig. 1



The Walk and Data Capture

System walks take place in both rural, wilderness and urban environments. A System Walk may follow a pre-defined route, or be an aimless stroll. Examples of pre-defined routes include an ongoing series of walks in the northwest of Scotland, that take in the mountains of Stac Pollaih, Suilven, and Cul Mor. Other walks, usually in urban environments, may not follow any predefined path, and operate more as psychogeographic wanderings in the city. Examples of these include walks in Edinburgh, Berlin and Istanbul. Many of these walks have been repeated, some

Fig. 1: Simplified diagram of the energy flow through the system of the System Walks, with the energy input of the walk, powering the production of the art outputs

over several years.

In both types of walk a GPS unit is carried to log key information, such as path coordinates, altitude, distance and speed, as all this data is potentially valuable. A waterproof time-lapse camera is worn on the chest using a harness, leaving the hands free to negotiate obstacles. The camera is programmed to capture a photograph at selected time intervals, such as every 10 or 20 seconds. This 'hand-and-eye-free' approach to photography removes the authorial intent from the process, as the author cannot make compositional and framing decisions. This passive approach is important, as the camera's role is to capture the colour values quantitatively, whilst the author is free to experience the walk qualitatively, unencumbered by the need to manage, edit, or curate the experience.

Studies in colour

On return to the studio from a walk the still frames are collated together into a sequence to produce a stop-motion film. It is at this stage that the author's aesthetic decision-making comes into play, as colour and meaning are extracted from the images. The author has designed a set of processes, built around a computer and digital drawing tools to allow the colors and positional information to be extracted from the film interactively. The film runs through each frame slowly, at a frame rate of 1 frame per second. Therefore each second of this process is equivalent of 10 seconds of the walk, based on a 10 second time-lapse sequence. Therefore it would take one hour of interaction to run through a film of a ten-hour walk. This process is designed to force a more intuitive and direct interaction with the material. The frame rate can be adjusted interactively in real-time, to allow the artist to have the optimal dynamic relationship with the material. If the material runs too slowly it may give too much time to ponder each frame, for example in compositional terms.

If it runs too quickly it will give insufficient time to make the correct aesthetic selections of colour.

Two types of work are made directly from the sampling process: line drawings and colour field prints. The selection of colours is made using a drawing tablet and pen. A continuous line is drawn across the film using a digital drawing tablet for the duration of the film. The pen is directed across the screen to select colours and areas of the image of interest. For each frame a single RGB digital pixel value is sampled. This drawn line is recorded and operates as a secondary walk through the sequence of images. During the construction of this line the original walk is remembered and reactivated. These lines have been presented in conjunction with the path of the walk, recorded by the GPS. The example below, shows the path of a walk in Berlin that has been repeated several times since 2010. On the left is the GPS line, and on the right is the line created from selecting the colour.

As the colours are selected through the movement of the pen, they are recorded, collated and assembled to produce solid fields of colour based on these colour values. The sampled colours are laid out as a grid of colours, starting in the upper left hand corner of the screen working down the screen from left to right. The example below shows work from a circular walk in the Scottish Borders from Selkirk to a group of large Cairns, called The Three Brethren.

An interesting aspect of the work is revealed when either the walk, or sampling is repeated. The above example shows the walk repeated after 12 months, and shows a different set of colours. The difference in colours between the two images can be attributed to the difference in light, vegetation, variation in spatial location, and also the path chosen by the pen in the selection process. The different paths, made through repeated drawings, become apparent when two samples of the same walk are presented together, as below. This iterative process can be repeated indefinitely,

Fig. 2

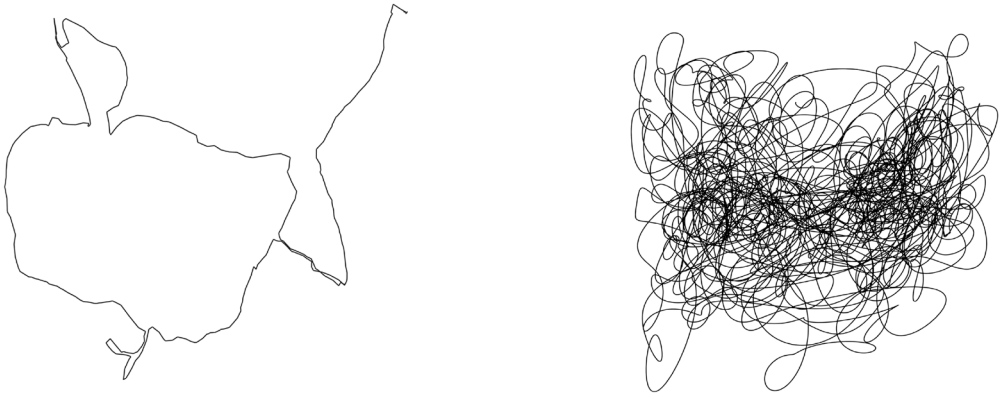


Fig. 3

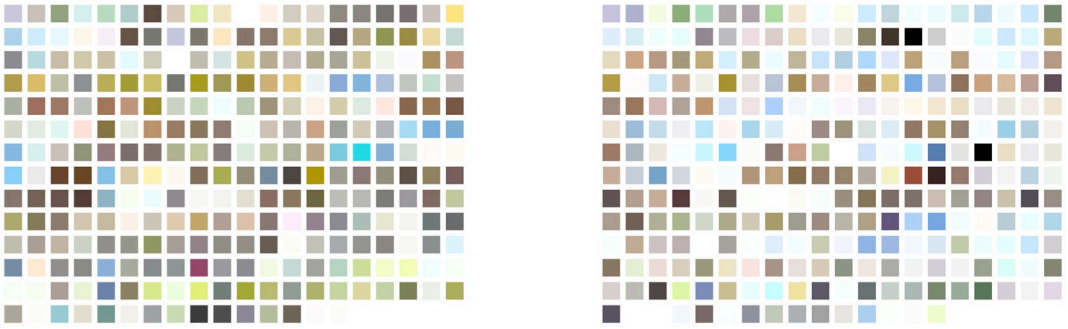


Fig. 2 Left image shows the GPS route of a walk in the Prezlauer Berg District of Berlin. The right image show the line during the colour selection process.
Fig. 3 The left image shows the colours selected from a circular walk to The Three Brethren, in the Scottish Borders in 2012. The right image shows the colours from the same route, when it was repeated in 2012.

which over time can allude to an underlying structure to both the abstract colour fields, and illustrates the author's preference for the colours that most represent his 'sense of place'.

Conclusions

With all of this work it is the aim of the author to capture the essence of a walk, a landscape and sense of place in abstract art work produced using systematic techniques. On another level he is interested in what this work suggests in terms of the subjectivity of sampling data. This is illustrated in his work through the iterative interrogation of the data, as each time he interacts with the material at the drawing stage a slightly different line and set of colours are created. Although not explicit in the work, the underlying suggestion is that all sampling of data from the physical world is to some degree subjective and is influenced by the qualitative humanity at both the sampling stages

Fig. 4

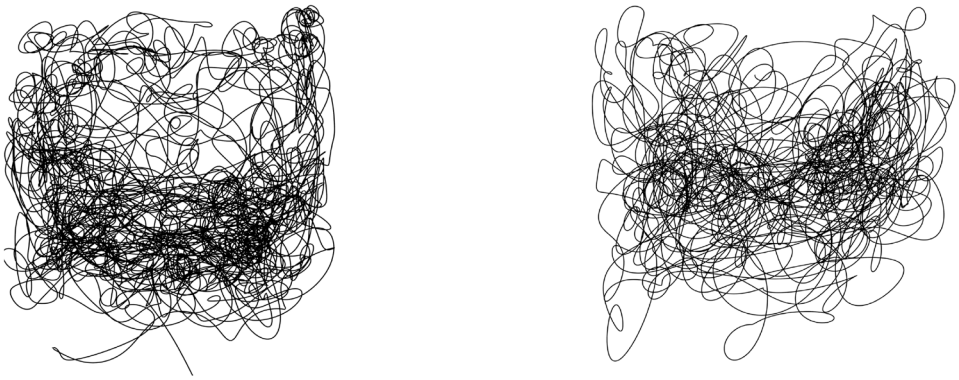


Fig.4 Two iterations or versions of the same walk in Prezlauer District of Berlin. Each line was produced during the colour selection process.

and interpretation stages. Thus, regardless of the clarity of the system employed by the physical and social sciences there will be a qualitative and interpretative dimension to the work that needs to be made explicit. There is no such thing as a perfect model in the real world, that perfectly reflects the phenomena it seeks to represent, as there will always be variables that you cannot account for. A system, therefore, can only be an approximate model of the real world. These abstracted works, the lines and the colour fields can therefore only be an approximate model of the walk, landscape and sense of place, but through repeated interaction, can still be an accurate model of how the artist reflected upon the walk and the data the walk produced.

Earlier in this paper the analogy Levine made between experience and hardware was made. In 1970 he presciently argued that mass-media was turning knowledge and representation into second hand experience, divorced from the physical world. This paper briefly describes the way in which the author attempts to understand and negotiate the increasingly system-based world and activate the information in these systems, through experience and energy, through making or walking. As Lanier argues 'Experience is the only process that can de-alienate information'.

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